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--20. An isolated, purified or recombinant polynucleotide encoding a mouse telomerase reverse transcriptase (mTERT) protein, wherein said protein:

- (i) has at least 90% sequence identity to SEQ ID NO:2; and,
- (ii) has telomerase catalytic activity.

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21. The polynucleotide of claim 20, wherein the encoded mTERT protein has an amino acid sequence of SEQ ID NO:2.

22. The polynucleotide of claim 21, wherein said polynucleotide has a sequence of SEQ ID NO:1.

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23. A cell comprising the polynucleotide of claim 20.

24. A cell comprising the polynucleotide of claim 21.

25. A cell comprising the polynucleotide of claim 22.

26. An expression vector comprising the polynucleotide of claim 20.

27. An expression vector comprising the polynucleotide of claim 21.

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28. A mouse cell in which an endogenous mTERT gene in the cell has been mutated by recombinant means, wherein said cell is deficient in telomerase catalytic activity, or progeny of said cell.

29. A mouse comprising a cell of claim 28.

30. A mouse comprising a cell of claim 29. --